

NORTRON
by BROAN®

Electric Furnaces



Setting a new standard

with the performance and reliability of a Nortron by Broan Electric Furnace.

Home Heating Goes Green. . . Introducing the ECM Series

A brilliant advancement in furnace technology, the Nortron by Broan ECM Series offers improved operating efficiency, lower overall energy costs and reduced greenhouse gas emissions associated with conventional electric power generation.

The superior performance of electronically commutated motors (ECM) is in part due to the motor's brushless DC design, which ensures greater efficiency over a wide speed range. Its permanent-magnet rotor ensures lower heat losses.

Experts say one of the most effective and least costly ways you can reduce your carbon footprint is to target energy efficiency.

Continuous Operation, Continuous Comfort

Continuous air circulation creates a more comfortable living environment with a more uniform temperature distribution and, when combined with a ventilation system, can dramatically improve indoor air quality.

When operating in continuous fan mode at low speed, an ECM motor offers up to 200% greater efficiency than standard motors. The energy saving benefits of a furnace with an ECM motor are most apparent when the fan is run in continuous mode.

In the past, operating a furnace in continuous mode has meant higher electricity costs. Today, thanks to our new Nortron by Broan ECM Series, you can enjoy the benefits of continuous fan operation with no significant increase, usually a decrease, in utility bills.

Enjoy continuous fan operation with no significant increase – usually a decrease – in utility bills.

Good for the Planet, Good for Your Pocketbook

Based on testing of gas furnaces, outfitted with an ECM motor, at the Canadian Centre for Housing Technology, the motor consumption of electricity can be reduced by up to 2,854 kWh/yr when you use an ECM versus a PSC motor.***

This savings is offset slightly during the heating season by a decrease in heat losses. The net result is a savings of up to 2,766 kWh/yr**. Based on an average electricity rate of \$0.084/kWh, you could save up to \$232 per year. (See below for average utility rates in your area.)

*Save up to \$232 per year on your utility bills!**

Annual savings based on 2,766 kWh/yr** & 2006 average utility rates



* Based on set conditions listed below at an electricity rate of \$0.084/kWh

** 2,854 kWh/yr savings in motor consumption of electricity - 88 kWh/yr due to reduced heat losses = 2,766 kWh/yr

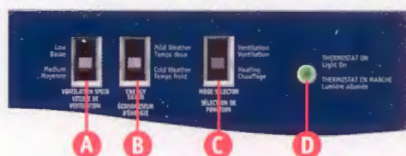
*** Test data is from CCHT report number NRCC-38500. Results are based on performance under set conditions (energy efficient house, continuous fan on low speed, air conditioning)

Proven value, functionality and reliability

New

ECM Series - The Energy Efficient Solution

Convenient built-in control



A. Ventilation Speed

Used in conjunction with the Ventilation setting on the Mode Selector switch, select **Low** or **Medium** blower speed for air distribution.

B. Energy Saver

Cold Weather - Select this setting during cold winter months to energize heating elements faster for a rapid response when the thermostat calls for heat.
Mild Weather - Select this setting during the spring and fall for a slower activation of the elements.

C. Mode Selector

Heating - The motor will operate in the standard heating mode, controlled by the thermostat.
Ventilation - The blower will run continuously on the speed selected by the Ventilation Speed switch to provide constant air circulation during warm months.

D. Thermostat "On" Light

Assists in locating source of any malfunction.



Optimum performance features

- ECM Motor and Blower** Energy saving multi-speed motor. Permanently lubricated. Blower is rubber mounted and precision balanced for quiet operation.
- Safety Limits** Each element includes a high temperature limit, auto-reset switch to prevent operation at unsafe air temperatures. The manual reset switch prevents cycling for extended component life.
- Relays** Reliable relays silently activate the elements.
- Circuit Board** Activates relays at staged intervals to prevent power surges. Controls automatic operation of the blower and allows for the addition of an air conditioner.
- Supply Wiring Block** Use 75 C supply wire of appropriate size. Cu-Al.
- Transformer** Heavy duty 24-volt output.
- Element Bank** Nickel-chrome elements create extremely high thermal efficiency. Greater heating surface offers rapid heat transfer. Each module slides out if service is required.
- Cabinet** Steel with baked epoxy (powder coat) finish. Approved for zero clearance; installs against combustible surfaces with complete safety.
- Filter** 20" x 20" x 1" (51 cm x 51 cm x 2.5 cm) disposable type. Traps dust and lint. Since no smoke or soot is produced, filter life is longer. Easily replaced without tools.

ECM Series

| Model | KW | BTU/H | AMPS incl motor | HP | Blower | °C | °F | Speed | RPM |
|---------|----|-------|--------------------|-----|----------------------------|----|----|-------|-----|
| 21ECM15 | 15 | 51180 | 64 | 1/3 | 10" x 8" (254 mm x 203 mm) | 22 | 72 | Med | 903 |
| 21ECM18 | 18 | 61420 | 76 | 1/3 | 10" x 8" (254 mm x 203 mm) | 26 | 79 | Med | 903 |
| 21ECM20 | 20 | 68240 | 84 | 1/3 | 10" x 8" (254 mm x 203 mm) | 29 | 84 | Med | 903 |

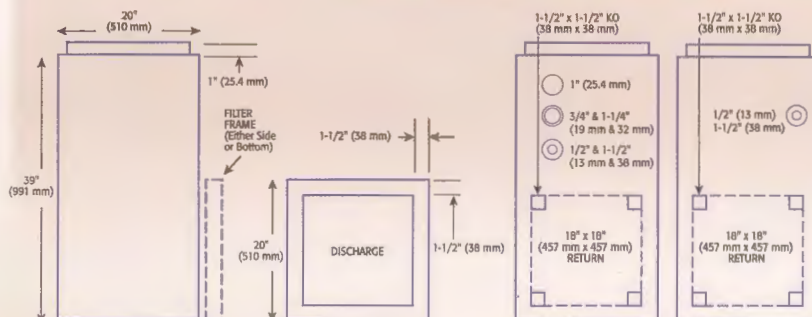
Note: All ECM Series Furnaces are CSA approved for use in mobile homes.

Blowers

| 10" x 8" | 0.2" W.C. | | 0.3" W.C. | | 0.4" W.C. | | 0.5" W.C. | | 0.6" W.C. | |
|----------|-----------|-----|-----------|-----|-----------|-----|-----------|------|-----------|-----|
| | Speeds | CFM | L/s | CFM | L/s | CFM | L/s | CFM | L/s | CFM |
| LOW* | 684 | 323 | 582 | 275 | 535 | 252 | 481 | 227 | 429 | 202 |
| MED | 1149 | 542 | 1104 | 521 | 1064 | 502 | 1016 | 479 | 977 | 461 |
| HIGH | 1238 | 584 | 1203 | 568 | 1174 | 554 | 1139 | 5379 | 1106 | 522 |

* This speed can only be run when heater is off, for cooling/ventilation purposes only.

Unit Dimensions & Accessories - Common to ECM and B Series.

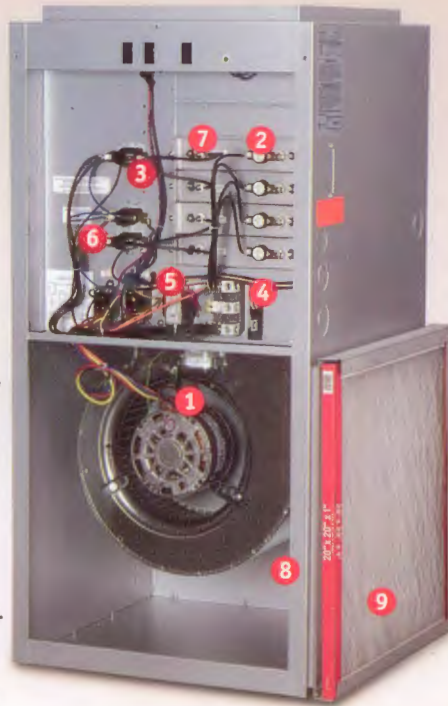
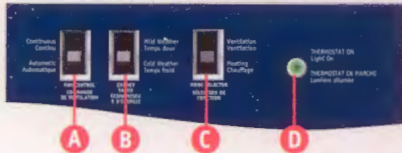


Accessories

| MODEL NO. | TO BE USED WITH | DESCRIPTION |
|-----------|---------------------|---|
| FK120 | B Series | 120-volt Furnace Kit - mounts inside furnace for the supply of electronic air cleaners and furnace humidifiers. |
| FK120ECM | ECM Series | 120-volt Furnace Kit - mounts inside furnace for the supply of electronic air cleaners and furnace humidifiers. |
| FSB1 | 10, 15, 18 or 20 kW | Sub-base - for use with furnaces in downflow Nortron Furnaces position for CSA listed mobile home installation. |

B Series - Setting the Standard

Convenient built-in control



Optimum performance features

- 1. Motor and Blower** Multi-speed motor is standard equipment. Permanently lubricated. Blower is rubber mounted and precision balanced for quiet operation.
- 2. Safety Limits** For safety, each element is equipped with a high temperature limit. The resetting type prevents operation at unsafe air temperatures due to blocked or dirty filters.
- 3. Time Delay Sequencers** Activate elements at staged intervals to prevent power surges.
- 4. Supply Wiring Block** Use 75 C supply wire of appropriate size. Cu-AL.
- 5. Transformer** Heavy duty 24-volt output, standard in every furnace.
- 6. Fan Relays** Control automatic operation of blower and allow for the addition of air conditioning.
- 7. Element Bank** Nickel-chrome elements create extremely high thermal efficiency. Greater heating surface offers rapid heat transfer. Each module slides out if service is required.
- 8. Cabinet** Steel with baked epoxy (powder coat) finish. Approved for zero clearance; installs against combustible surfaces with complete safety.
- 9. Filter** 20" x 20" x 1" (51 cm x 51 cm x 2.5 cm) disposable type. Traps dust and lint. Since no smoke or soot is produced, filter life is longer. Easily replaced without tools.

A. Fan Control

Continuous Low – Motor runs continuously on low to help equalize room temperature.

Automatic – Motor will start on low speed when thermostat energizes first element and will stop when thermostat opens.

In both switch positions, the blower will automatically change to a higher speed after additional elements are energized by the sequencers and plenum temperature rises.* This minimizes cold drafts that might occur before the furnace reaches full output.

B. Energy Saver

Mild Weather – Disconnects approximately half of the elements so entire furnace is not energized during milder fall and spring months.

Cold Weather – All element banks are available for heat.

C. Mode Selector

Continuous High (Thermostat Bi-pass) – Motor runs continuously on high for constant air circulation during warm weather months.

Automatic – Blower controlled by thermostat.

D. Thermostat "On" Light

Assists in locating source of any malfunction.

B Series

| 240 VOLTS - SINGLE PHASE | | | | | | TEMP RISE @ 0.20" W.C | | | |
|--------------------------|----|-------|--------------------|------|---------------------------|-----------------------|----|----------|-----|
| MODEL NO. | KW | BTU/H | AMPS incl motor | H.P. | BLOWER | °C | °F | Speed | RPM |
| 21B10M | 10 | 34120 | 46 | 1/3 | 10" x 8" (25.4 X 20.3 cm) | 21 | 70 | Low | 663 |
| 21B15M | 15 | 51180 | 67 | 1/3 | 10" x 8" (25.4 X 20.3 cm) | 24 | 75 | Med-Low | 814 |
| 21B18M | 18 | 61420 | 77 | 1/3 | 10" x 8" (25.4 X 20.3 cm) | 27 | 81 | Med-Low | 814 |
| 21B20M | 20 | 68240 | 86 | 1/3 | 10" x 8" (25.4 X 20.3 cm) | 33 | 91 | Med-Low | 814 |
| 21B25M | 25 | 85300 | 107 | 1/3 | 10" x 8" (25.4 X 20.3 cm) | 37 | 99 | Med-Low | 814 |
| 21B27MS* | 27 | 92130 | 116 | 3/4 | 12" x 8" (30.4 X 20.3 cm) | 36 | 97 | Med-High | 707 |

| 208 VOLTS - THREE PHASE | | | | | | TEMP RISE @ 0.20" W.C | | | |
|-------------------------|------|-------|--------------------|------|---------------------------|-----------------------|-----|-------|-----|
| MODEL NO. | KW | BTU/H | AMPS incl motor | H.P. | BLOWER | °C | °F | Speed | RPM |
| 83B13 | 13.5 | 46062 | 42 | 1/3 | 10" x 8" (25.4 X 20.3 cm) | 21 | 70 | Med | 960 |
| 83B24 | 24 | 81880 | 70 | 1/3 | 10" x 8" (25.4 X 20.3 cm) | 35 | 95 | Med | 960 |
| 83B27 | 27 | 92124 | 78 | 1/3 | 10" x 8" (25.4 X 20.3 cm) | 39 | 102 | Med | 960 |

*21B27MS has built-in noise absorption components to run quietly during continuous or regular cycle modes.

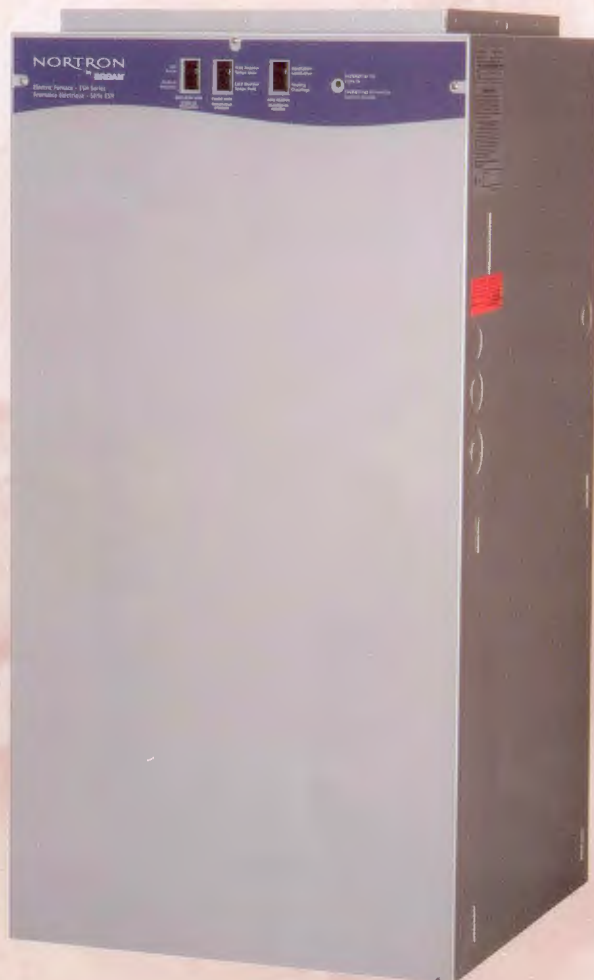
Blowers

| 10" x 8" | 0.20" W.C. | | 0.50" W.C. | | 12" x 8" | 0.20" W.C. | | 0.50" W.C. | | ADDITIONAL FEATURES |
|----------|------------|------|------------|------|----------|------------|------|------------|------|--|
| | RPM | CFM | RPM | CFM | | RPM | CFM | RPM | CFM | |
| LOW | 663 | 756 | 872 | 729 | LOW | 499 | 727 | 657 | 636 | <ul style="list-style-type: none"> Built-in fan relays for easy add-on of air conditioner. Provision for two-stage or outdoor thermostat (available on all models except 10 kW). |
| MED-LOW | 814 | 1035 | 958 | 971 | MED-LOW | 576 | 912 | 714 | 853 | |
| MED-HIGH | 887 | 1177 | 999 | 1063 | MED-HIGH | 707 | 1216 | 808 | 1157 | |
| HIGH | 948 | 1301 | 1090 | 1207 | HIGH | 891 | 1640 | 947 | 1513 | |

Warm up to efficient home heating

Advantages of an electric furnace

The Nortron by Broan line of Electric Furnaces is the preferred choice for homeowners everywhere. Noted for their superior construction, unparalleled performance and low maintenance, these furnaces represent electric home heating at its best. With Nortron by Broan, you'll not only benefit from simple installations, worry-free operation and increased energy efficiency, you'll gain exceptional versatility, functionality and premium features that bring comfort, convenience and peace of mind to every moment you spend at home.



Installs Almost Anywhere...

In a basement, closet, crawl space or any unused area or alcove. CSA approved for zero clearance.

Efficiency...

No chimney is required, so 100% of the heat produced stays inside.

Simple Installation...

No complex controls to attach. Just connect the power and thermostat wires.

Cleanliness...

Produces no soot or smoke.

Versatility...

For complete comfort, add air conditioner, power humidifier or electronic air cleaner as desired.

Quiet Operation...

The blower – the only moving part – is specially mounted and balanced for an optimal quiet operation.

Multi-Speed Motor...

Standard equipment for versatility and convenience.

CSA Approved...

All models are CSA approved for zero clearance installations. 10, 15, 18 and 20 kW models meet additional requirements for use in mobile homes when used with FSB1 sub-base.



BROAN®

The leader in residential ventilation.



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